



Ø BEAT



DECEMBER 1985

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FIFTY CENTS AN ISSUE / \$4 PER YEAR

Frank Drake - KL7IPV
4964 Harvest Rd.,
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Ø BEAT



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ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association Inc., P.O. Box 16521, Colorado Springs, Colorado 80935. Cost is 50¢ per month for non-members or a \$4.00 per year subscription. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at Giuseppe's Depot Restaurant at 10 S. Sierra Madre at 7:30 p.m. All amateurs and interested parties are invited to attend.

Editor: Frank Drake KL7IPV, 4964 Harvest Rd. Colorado Springs, CO 80917 597-2406



SECRETARY'S CORNER

GENERAL MEETING - November 13, 1985

The meeting was called to order by Les, KC0NC at 7:30PM at Giuseppe's Depot with 50 members present. Minutes were approved as read in the Oct. issue of Zero Beat. Treasurer's report showed an income of \$328.00, expenses of \$126.00 and a balance of \$1058.72.

OLD BUSINESS: Christmas Party to be held on Dec. 11th at Peterson NCO Club. A HT will be given away as a grand prize and the winner need not be present to win. The raffle for the HT is \$1.00. You must be present to win the other prizes.

COMMITTEE REPORTS: Public Service Committee - Mike, K0TER. Nothing new. Education Comm. - Frank, KL7IPV. Joe, N0ENH, reported on the status of the Novice classes. Jim, WA9ABB, reported progress in teaching at the D&B School. Jim would like to have some help. It is a very rewarding feeling when his students learn. He also would like someone to make a "component board" showing the location and schematic symbols for each component.

CCARC - Oak, K0R0L. Oak will not be able to make this meeting.

Christmas Party - Myron, AH6AP. The party will be at Peterson AFB NCO Club and will cost \$13.00 for the Prime Rib or \$10.50 for the Halibut Steak. The cost of the ticket includes the raffle

prize ticket for the HT. Contact Myron at 634-3288 or any board member for ticket info.

SWAP FEST - Ron, NK0P. Ther SWAP FEST is scheduled for May 17th, 1986 and will be held at the Rustic Hills Shopping Center at N. Academy and Palmer Park Blvd.

ARES - Jake, N0CYR. Nothing new.

Field Day - Tom, A000. Tom wants anyone interested to contact him.

RFI - Ron, NK0P. Citizens Cable is starting up on the weekend of the 16th. If anyone experiences problems let Ron know.

NEW BUSINESS: The club needs a chairman for developing a repeater for portable and emergency use. Also to be used for special events. Don, WD0HWS, and Mike, K0TER volunteered.

VE TESTS - Pete, N0LA. Tests to be held this weekend at the First Methodist Church at 428 N. Nevada St. at 9:00AM.

ZERO BEAT - Frank, KL7IPV. Deadline is Nov. 27th for articles for the Dec. articles.

Being no further business, a short break followed. ~~R~~Raffle followed & then the program.

PROGRAM: Packet Radio by Dave Shavey, K0HOA and Malcolm, KE9S. It was very interesting and many stayed to learn. The meeting adjourned at 9:30 PM.

Submitted by Al, N0CMW. Sec'y

FOR SALE: From the estate of Mert Jackson, W00XR.

Swan 350 with AC Pwr Sply & manual. 80 thru 10 meters. 400 Watts PEP. \$150.00
Heath SB-200 Linear, 1200 Watts PEP. 80 thru 10 meters with manual. Sell to licensed ham ONLY. \$250.00

Contact Ed Means, W0VQ. 473-6174

December Skies

TO USE OUTDOORS, FACE SOUTH
AND HOLD THE MAP OVERHEAD



EVENING VIEWING

Early December 9 p.m.
Late December 8 p.m.

STAR BRIGHTNESS

1st Magnitude - ★
2nd Magnitude - ★★
3rd Magnitude - ★★★
4th Magnitude - ★★★★

PLANET SYMBOLS

Mercury ☿
Venus ♀
Mars ♂
Jupiter ♃
Saturn ♄
Uranus ♅
Neptune ♆
Pluto ♇

Star Chart by Mark Peterson

The Planets

Mercury

Mercury is very low in the southeast shortly before sunup.

Venus

Venus is quite difficult to see this month, but may be glimpsed in the east just before sunrise in the first part of the month.

Mars

Mars is in the morning sky in Virgo/Libra and rises about five hours before the sun. It is occulted (eclipsed) by the moon at about 3 am on the 8th but this will not be easily seen from Colorado.

Jupiter

Jupiter is low in the south in the constellation Capricornus after sunset. It goes down in the southwest about four or five hours later.

Saturn

In Scorpius, Saturn is very low in the southeast before sunrise.

Calendar

- Dec. 1** Halley's Comet 58,590,000 miles from Earth (94,291,646 kilometers)
Dec. 5 2:01 am Last Quarter Moon
Dec. 8 Moon occults (eclipses) Mars. Not easily visible from Colorado.
Dec. 10 6 pm Moon at perigee (closest point to Earth - 358,600 kilometers)
Dec. 11 5:54 pm New Moon
Dec. 13 11:00 pm Geminid meteors peak this night
Dec. 18 6:58 pm First Quarter Moon
Dec. 21 3:08 pm Winter Solstice (winter begins)
Dec. 23 Midnight Moon at apogee (farthest from Earth - 405,600 kilometers)
Dec. 27 12:30 am Full Moon
Dec. 31 Halley's Comet 106,020,000 miles from Earth (170,622,978 kilometers)

GATES PLANETARIUM

DENVER MUSEUM OF NATURAL HISTORY

Hams as humanitarians

The American public learned of the Amateur Radio service the hard way again. This time the catastrophe was the earthquake suffered by our neighbor, Mexico.

The news media, looking for information themselves, showed the public something. People afraid for the safety of relatives and friends could get the information they so urgently needed, but only through the Amateur Radio community.

Newspapers across the country outdid themselves in their coverage of local hams running traffic.

The following are excerpts from some of the articles Worldradio received from its readers. So many news items, editorials, letters to the editor, and personal accounts of individual operators were received that it is impossible to include them all. Our thanks to all who took the time to write.

The San Francisco Chronicle staff wrote the following editorial:

"Hams on the Job Once Again

Amateur Radio operators, hams, as they are known, have once again made a distinctive contribution at a time of great distress, this time providing emergency communication in the Mexico City earthquake disaster.

With commercial telephone and radio services destroyed or disrupted, a small group of Mexican hams remained on the air to send messages from the quake area to the world outside. Their time, their talent, their willingness to serve in cooperation with their American colleagues in time of disaster have been, once again, vital to the strangers they serve.

We can think of no other hobby that contributes so much to society when trouble strikes."

The Miami Herald detailed the activities of SIRA, a large group of Spanish speaking Florida Amateurs.

Dixon, Illinois Telegraph with a photo story on the Tri-County Amateur Radio Association club station.

The Daily Journal, Fergus Falls, MN., with a story on Keith McKay, N0FKF.

Asbury Park Press, in New Jersey had the following:

"Amateur Radio operators tried to fill the void in communications created when Thursday's earthquake devastated Mexico City, severing the lines of communication between the world's most densely populated urban area and the rest of the world."

The Salvation Army's publication, War Cry tells its readers:

Ham radio operators have been crucial to the Army's receiving information and responding quickly to the needs. All telephone service in and out of Mexico City was cut by the earthquake.

The Red Bank Register reported on W2ZEE with the following:

"I'm tired," Gspann said last night, explaining he has been working 20 hours a day using his federally issued call sign W2ZEE.

But he intends to be by his radio again come morning.

The Houston Post told of WB5INB:

"Dave Paperman leaned back in his chair, lighted another cigarette and blinked his reddened eyes a few times.

"I've had seven hours sleep in 72 hours, and I'm a little dinky," he said around midday Saturday. "Some of this is just a blur."

For most of those 72 hours, Paperman and other Houston amateur radio operators were hunched over transmitters and receivers, trying to get word into and out of Mexico City about the extent of the deaths and damage caused by earthquakes which struck there twice in recent days.

He handled inquiries for the French consulate here; for the famous comedian Cantinflas, who was in Houston; and for people from as far away as Toronto and Ottawa worried about family members and associates as death toll numbers mounted almost hourly.

"There were a lot of tears at the other end of the telephone line," Paperman said of the reports he made back to anxious callers.

"Thank God they were tears of happiness," he said. "All of the traffic (messages) I have had back (from Mexico) has been in one of two categories: Everyone is well and I just spoke to so-and-so, or I can't get through to them."

Paperman and other Houston amateur radio operators responded promptly after reports of the first earthquake were received early Thursday."

The Roseville (California) Press Tribune carried a three column photo and story about Bob Metke, W6SUP who ultimately passed 2,363 pieces of traffic relating to the Mexico quake.

Tom Henessey, columnist for the Long Beach, California, Press Telegram (and a non-ham) wrote what may be the best assessment of the Amateur Radio service in his column of September 24, 1985.

"Beyond eavesdropping, I know little about amateur radio operators, more popularly known as 'hams'.

There is a short-wave receiver in our house. For two years it has provided pleasant listening: cross-country gossip, the joy of a Missourian contacting a ham in Tahiti, the lament of a snowbound New Englander about to go outside to get more logs for the fire.

On Thursday, all that changed. When the earth rumbled fearfully beneath Mex-

ico, our receiver suddenly became an arena of drama and caring.

What happened was this. As the hours wore on, Americans who once may have viewed ham operators as harmless hobbyists began realizing they were virtually the only people in a position to obtain information about the fate of loved ones in Mexico.

By the hundreds, then by the thousands, inquiries poured into Mexico via amateur radio.

Via radio and whatever phones were working, Mexican operators found the answers and sent them crackling back to the U.S.

Battling static, confusion and sleepiness, the hams kept on. One in Mexico apologized that he was stepping away for "a bit of breakfast." It was four o'clock in the afternoon. Another, named Luis, was still answering inquiries hours after someone noted he had not slept for two days.

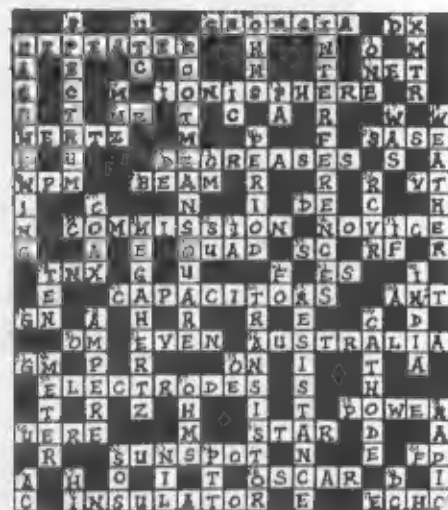
Another regretted having to leave his radio for an overseas business trip. His final transmission: "My heart goes out to you."

As I left for work Monday, the amateur radio operators were still on the job. A calamity had produced a world without strangers or international borders; a radio world populated by people who, bone-weary, still could not do enough for one another.

"Amateur" radio operators?

Not by a long shot."

Puzzle Answer



E.T. PHONE HOME



No, it's not E.T.'s Spaceship. It's a big 60' dish Steve Tolley, KL7FZ, was given! He's moving it from Homer, Alaska to the Matanuska Valley for amateur radio use!

One more shot of the fantastic 60' dish which is being moved to the Matanuska Valley for club use. It's a distance of about 300 miles. Great idea, Steve!

Follows is a list of new hams to our ranks. They either passed here or elsewhere...our congratulations to them.

Carl Woodruff - K0WVB new Advanced
Marvin Pratt - KA0SKK new Tech
Jimmy Dean - KA0VFJ new Extra
Charles Griffith - KA0MDC new Tech
Charles Barentine - KA0UET new Adv.
Donald Fuhs - W00YJD new Advanced
Barry Cook - W0M00 new Advanced
Michael Haase - none new Tech
Keith Moran - none new Tech
Donald Holman - none new Tech
Brian Holman - KA0VGI new Advanced
Hazel Redding - none new General
Augustus Dent, Jr. none new General

The V.E.'s experienced a 81% pass rate! The next tests are tentatively scheduled for February 22nd. Place has not been determined at this time. Contact Pete, N0LA for info.

REMEMBER THAT DUES ARE DUE FOR 1986

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Mailing lists: It was brought up that the club buy mailing lists of the local ZIP codes and to mail approximately 100 extra Zero Beats to nonmember hams as inducement to join the PPRAA. That to happen when we go to bulk mailing at the first of the year. No action taken.

Raffles: The Christmas Party main prize will be an Icom Q2AT HT, purchased from Icom. It was also agreed that the V.Pres try to purchase any modern HF rig for the Swapfest doorprize with the price not to exceed \$400 from any major manufacturer.

Repeaters: The committee was given the go-ahead to work on obtaining a portable repeater.

Christmas Party: Myron gave a run down on it and every thing was going as planned. Being no further business, the meeting was adjourned at 9:15PM.

Submitted by Al, N8CMM, Sec'y

NOTICE NOTICE NOTICE NOTICE NOTICE
Dues for the PPRAA for 1986 are now due. You may pay your dues to any of the board members or to the treasurer at the regular general meetings. Don't miss out on any of the EXCITING issues of Zero Beat because you didn't get your dues in on time. You'll find the renewal application on the back page.

DUES ARE DUE!! DUES ARE DUE!!

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All for \$725. Call Myron Babcock AH6AP 634-3288

OOPS!! OOPS!! OOPS!! OOPS!! OOPS!!
I promised you the info about the Morse code practise on two meters. I have run out of rope. Briefly, the sessions are run on 146.40 from Baculite Mesa & on 446.200 in Pueblo each day. All ID's and the preamble are sent at 13 WPM. That is sent at the beginning and end of each hour of operation. I will print the exact text of the preamble next month. Bulletins are sent at 21, 13 and 5 WPM. Address for info is: W00DMQ Pueblo Ham Club, Inc. P.O.Box 92, Pueblo, Co 81002

Ideal Conditions Will Be Needed to See Halley's Comet

If all goes as predicted, by the end of December Halley's Comet will become bright enough to be seen by the unaided eye *under ideal conditions*. The ideal conditions include excellent eyesight, a clear, dark observing site away from all lights and an exact knowledge of where the comet is in the sky. We should point out that at the time of this writing, the comet is somewhat fainter than originally predicted.

Rapid Movement

The comet moves rapidly every night from Pisces into Aquarius, constellations which are well placed in the western sky for several hours after sunset at this time of year. Although the comet appears lower in the sky each evening, it is expected to become brighter and should be an easy object to spot with binoculars. On Dec. 13-15 Halley's Comet passes through the "circlet of the western fish" in Pisces, just south of the easily recognized square of stars in Pegasus.

The light of a waxing crescent moon from roughly 13 through 29 December (full moon is on the 27th) will interfere somewhat with observing the comet. All things considered, the last week in December and the first week and a half of January may well offer the best viewing of the comet until the early part of April.

View to West Needed

You may be able to view the comet during a holiday ski trip to the mountains as long as the site has a good view of the western and southwestern sky. Interestingly, some have suggested that the much-discussed "Christmas Star" may have been a comet. This isn't likely, however, as comets were usually thought of as omens of evil by the ancients. And it certainly couldn't have been Halley's Comet since this celestial apparition appeared in 11 BC (too early) and again in AD 66 (too late). The appearance of the comet in 11 BC, in fact, was considered an omen of the death of the great Roman statesman Marcus Vipsanius Agrippa, and in AD 66 a Jewish historian considered the comet a messenger of the destruction of Jerusalem (AD 70).

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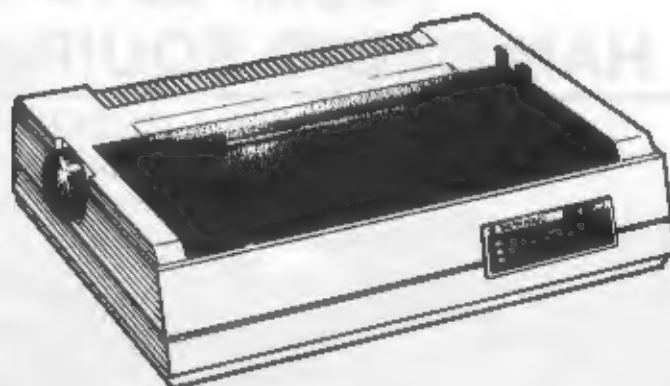
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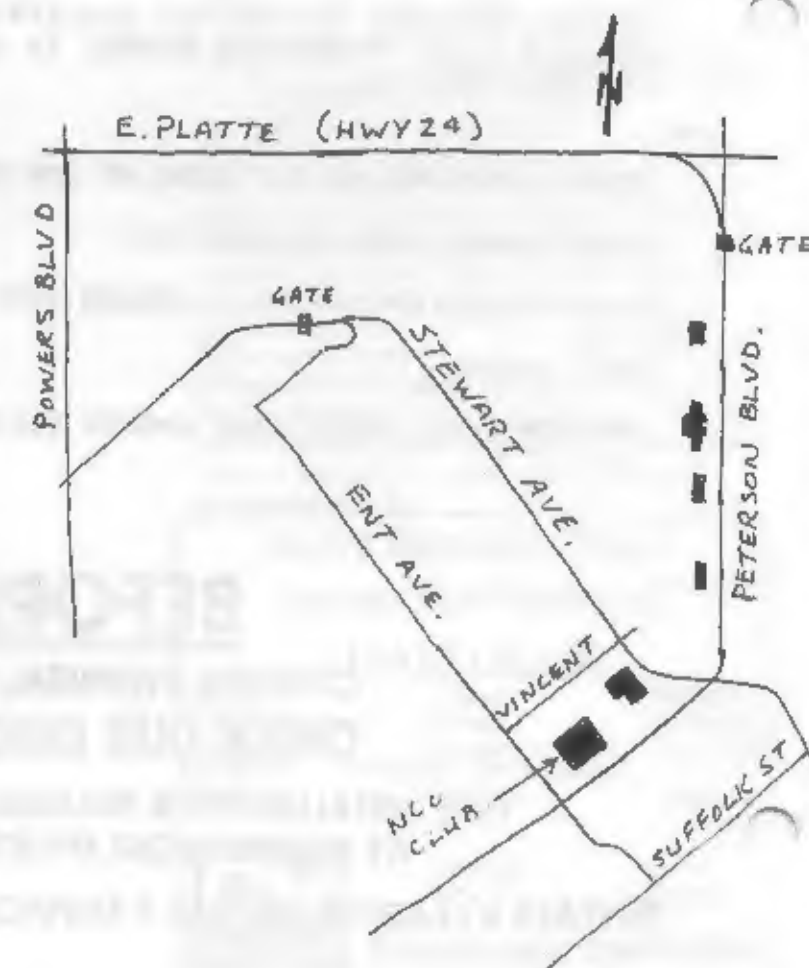
Larsen LM 150 5/8 wave 2 meter antenna with magnetic or trunk lid mount — \$38.50

SAMS Computer Facts and Troubleshooting/Repair books and manuals for personal computers —
Commodore, Radio Shack, Apple, Osborne and IBM in stock

BRING YOUR EQUIPMENT TO TRADE — LET'S TALK!

The Colorado AMSAT Net is on 147.225 + 600 every Wednesday evening at 1900 MST. This net brings you the latest information on Amateur Satellite activity and the upcoming launches of Phase III (USA), JAS-1 (JAPAN), and RS9 and RS10 (USSR). A spring Shuttle launch that will carry amateur PACKET radio, Beginners and "Old Timers", come on and join us in this exciting phase of amateur radio. 73,
Ed Means - WØVD

For all you would be and amateur astronomers, the sky map and info about Halley's Comet are reprinted with permission of Larry Sessions. The pages are taken from the December issue of "Bear Pause", the monthly newsletter of the Denver Museum of Natural History. I am a member of that and if you are not, you might consider it. They are doing great things up there. I remember going to the museum when I was stationed at Lowry AFB in 1958. I still enjoy going up there. If you haven't been there in a while, you'll be surprised at what has happened to the museum. The IMAX Theatre will blow your mind. The screen is 40' high by 60' wide and you sit right on top of it! Talk about being there..... Again, thanks to Larry at the museum for allowing me to reprint the comet info.





COMPUTER CORNER

FROM THE DESK OF YE OLDE EDITOR

This month I am including some photos of a surplus antenna given to one of the hams in Alaska. The antenna is a rather large one, that is only a SIXTY foot dish. It has to be moved about 300 miles to it's final place of use. I don't know who is paying for it to be moved, but it ought to have a monster signal when it finally is put on the air. As I write this, I am not sure how the pictures are going to reproduce from the Alaska newsletter, so I am hoping for the best. I am also putting in the rest of the program run last month and the answers to the crossword puzzle. I hope you didn't find it too easy. This month will find us meeting at the NCO Club on Peterson AFB for our annual Christmas Party. We have some neat door prizes and I'll look for you all to be there. The Christmas Party will be on December 11th, and commence about 7:30 PM. Tickets are on sale now and will include the door prize ticket. I have also got a couple of "FOR SALE" ads in this issue. Call the guys with the radios and see what you can score up for your own Christmas gift this year. They both sound like really good deals to me! I am also including articles from the December "Worldradio News". If you don't subscribe to that newspaper, I suggest that you consider it. I was not at all familiar with it prior to getting it for use in the Zero Beat. I find that it is really a pretty good newspaper and gives some insight to what other clubs are doing. We aren't really different from most of them. The new format is convenient for reading and carrying. Not a bad deal for \$11 a year. No, I don't get a cut, I just thought that those of you who used to get 73 Magazine and quit (I did) might like to get this as a replacement. I am also putting an article from the Pueblo Ham Club "Grid Leak". It is about the morse code practice on the air and the scheduled that it follows. I think that WD8DMQ deserves our thanks. It may help many of the techs out there get upgraded. Anyway, if you think of it you might drop a card to WD8DMQ and let him know that you appreciate his efforts in our behalf. Thanks, Dave. I am not on the air mobile lately. I have a new car, a Dodge LANCER, and it isn't wired up as yet. I haven't figured out where I want to put the antenna yet. I must admit

that a four cylinder engine with a turbo charger can be a mean machine. I thought that my Gran Fury ran really good. Well, I am here to tell you that a "four banger" with 145 horses is not a weak kneed performer. Anyway, when I finally figure out where I can hang an antenna, you will hear me. I am also a little concerned about what the RF might do to the computer that controls everything under the hood. In a Dodge, when you lose the computer, you lose it all. It costs about \$400! to get it replaced or reprogrammed. Nothing to take lightly. I remember that Subaru had a similar problem about five years ago and resolved it. But, until they did, a lot of hams sat in dead cars! Well, I will see you on the air when I do. Until then, my best wishes to you all for a very Merry Christmas and a Prosperous and Happy New Year. 73,

This months regularly scheduled PPRAA meeting is NOT being held as usual. It is a dinner for members and family and will be held at the Peterson AFB NCO Club. It will start with no host cocktails at 6:30 PM and dinner at 7:30 PM. A map and details will be found in this issue on another page. Door prizes are going to be given away. You will have to be present to win everything except the handheld radio. See you there.

Welcome a new advertizer from Denver. Gateway Electronics has everything I'm told. Don, WD8HWS, tells me Gateway stocks stuff that is priced in the "give-away" range. Check 'em out. The place sounds interesting. Thanks for the support, GATEWAY ELECTRONICS.

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1970 PRINT"IF YOU CHOOSE THE COIL DIAMETER, THEN"
1980 PRINT"THE LENGTH CAN BE WHATEVER IS NECESSARY."PRINT
1990 PRINT"THE COMPUTER WILL ALSO TELL YOU THE"
2000 PRINT"LENGTH TO DIAMETER RATIO AND ASK IF YOU"
2010 PRINT"WOULD LIKE THE NUMBER OF TURNS FOR A"
2020 PRINT"SPACE WOUND COIL OF SPECIFIED LENGTH."
2030 RETURN

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BOARD MINUTES - November 18, 1985

The board meeting was held at the home of Al, N8CMW, at 7:00PM. Those in attendance were Al, N8CMW; Ron, NK8P; Jim, WA9ABB; Les, KC8NC; Ken, WA6TTY; Bud, N8DDF; Frank, KL7IPV; Tom, AD8Q; Don, WD8HWS; and Myron, AH6AP.

Ron gave a rundown on the Swapfest. It was agreed to have it at the Rustic Hills Shopping Center on Saturday, May 17th, 1986. We can get into the center at 8:00AM and other details will be worked out by the committee. Motion was made, seconded, and unanimously approved to advance the swapfest committee \$250. Memberships: It was approved to put renewal applications in the Zero Beat. Disposal of Records: It was unanimously that old records prior to 1984 may be destroyed.

CCARC: Al, N8CMW, gave a rundown of happenings of the CCARC meeting Nov. 16th. The planned Colo. Callbook has been cancelled. The frequency co-ordinator was advised to keep the 15Khz spacing. CCARC created a new position of Publicity COOrdinator. Dues for CCARC membership to remain at \$.20 per capita, with a minimum of \$5 and a maximum of \$25 per club. Those who loaned money to CCARC to have a callbook published will get it returned to them. The following were voted into office: Bill Sheffield, Pres., Darla Richardson, V. Pres., Eileen Armagost, Secretary; John Willis, Treas. Alos voted to have three new committees: Publicity, Legal and Lost equipment. They also voted to meet two times a year rather than four.

BOARD MINUTES CONTINUED ON PAGE 6

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 the month as the newsletter computer. I
 also have a KAYPRO 2 with two SS/DD disc
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REMEMBER 1986 DUES ARE DUE!!

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1310 R=INT(N2*W*100/D)/100
1320 IF A =1 THEN1480
1330 IF A =2 THEN1500
1340 IF A =3 THEN1520
1350 PRINT"THE LENGTH TO DIA. RATIO IS"
1360 PRINT R
1370 IF A=4 THEN GOSUB1540
1380 FOR X=1 TO 10:PRINT:NEXT
1390 PRINT "SELECT ANOTHER FORM AND/OR DIFFERENT "
1400 PRINT"SIZE WIRE?":PRINT
1410 INPUT"(Y OR N)";C$
1420 IF C$="Y" THEN690 PRINT
1430 PRINT "DESIGN ANOTHER COIL?(Y OR N)":INPUTB$
1440 IF B$="Y" THEN500
1450 PRINT:PRINT
1460 PRINT"O.K. GOOD LUCK WITH YOUR PROJECT!!"
1470 END
1480 IF N2*W>.385 THEN PRINT"COIL TOO LONG FOR 1/2 W FORM":GOTO1390
1490 IF N2*W<=.385 GOTO1350
1500 IF N2*W>.525 THEN PRINT"COIL TOO LONG FOR 1W FORM":GOTO1390
1510 IF N2*W<=.525 GOTO1350
1520 IF N2*W>.650 THEN PRINT"COIL TOO LONG FOR 2W FORM":GOTO1390
1530 IF N2*W<=.650 GOTO1350
1540 PRINT"WOULD YOU LIKE TO SELECT THE LENGTH"
1550 INPUT"FOR A SPACE WOUND COIL (Y OR N)";Z$
1560 IF Z$="N" GOTO1450
1570 SL=(INT(N2*W*100)/100
1580 PRINT"THE LENGTH MUST BE GREATER THAN"; SL
1590 PRINT"INCHES, NEW LENGTH?"
1600 INPUT NL
1610 N2=INT((SQR((L*(4.5*D+10*NL)/((D/2)^2))))* 100+.5)/100
1620 FOR X=1 TO 14:PRINT":NEXT
1630 PRINT"WIRE SIZE=";G;" GAGE"
1640 PRINT"COIL DIA.=";D;" INCHES"
1650 PRINT"NUMBER OF TURNS=";N2
1660 PRINT"COIL LENGTH=";NL;" INCHES"
1670 RETURN
1680 END
1690 PRINTTAB(3)"THIS IS A COIL DESIGN PROGRAM BY"
1700 PRINT
1710 PRINTTAB(8)"HARRY L. ROSIER K4LBF":PRINT:FORI=1TO2000:NEXT
1720 PRINT"THE PROGRAM IS TO BE USED TO DESIGN "
1730 PRINT"SINGLE LAYER SOLENOIDS ON STANDARD"
1740 PRINT"RESISTOR FORMS OR ON A FORM HAVING A "
1750 PRINT"DIAMETER OF YOUR CHOOSING."
1760 PRINT
1770 PRINT"THE INDUCTANCE FORMULA IS FROM THE"
1780 PRINT"RADIO AMATEUR'S HANDBOOK."
1790 PRINT
1800 PRINT"THIS FORMULA IS TRANSPOSED TO DETERMINE"
1810 PRINT"THE NUMBER OF TURNS REQUIRED, AND THE "
1820 PRINT"RESULTING QUADRATIC IS SOLVED USING THE"
1830 PRINT"CLASSICAL EQUATION."
1840 PRINT
1850 PRINT"YOU DECIDE THE SIZE OF COIL FORM, THE"
1860 PRINT"INDUCANCE, OR INDUCTIVE REACTANCE, AND"
1870 PRINT"THE THE WIRE SIZE -"

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PROGRAM CONTINUED ON PREVIOUS PAGE

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